HP MSM Controller Series

Data sheet

Product overview

Working in unison with HP MSM access points, the HP MSM Controller Series delivers high-performance networking solutions. The enhanced architecture scales to 802.11n without requiring controller replacement. Robust identity- and roles-based user account profiles, as well as Virtual Service Communities (VSCs) with independently configurable Quality of Service (QoS), authentication, encryption, and VLAN support, deliver intelligence to the network edge. Scalable from small to larger deployments, the MSM wireless controllers support a fast-roaming capability. Wireless security is comprehensive with support for internal and external authentication, authorization, and accounting (AAA) servers, built-in stateful firewall, per-user VLAN mapping, and authentication.

Key features

- Ease of use, scalability, and redundancy
- Enhanced architecture for flexible network design
- IEEE 802.11a/b/g/n AP and access device support
- Comprehensive WLAN security
- Appliance and blade form factors

Features and benefits

Quality of Service (QoS)

- **Rate limiting:** supports per-wireless client ingress-enforced maximums and per-wireless client, per-queue guaranteed minimums

- **Diagnostic:** client event log records association, authentication, and DHCP events; includes a packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format), a wireless client data rate matrix, and a client status page; complete session logging provides detailed information for problem identification and resolution

- **Centralized traffic:** Layer 2 and Layer 3 QoS settings are maintained when using Mobility Traffic Manager or guest access

Firewall

- **Stateful firewall:** enforces firewall policies to control traffic and filter access to network services; maintains session information for every connection passing through it, enabling the firewall to control packets based on existing sessions

- **NAT/PAT:** choice of dynamic partial address translation (PAT) or static network address translation (NAT) preserves a network's IP address pool or conceals the private address of network resources, such as Web servers, which are made accessible to users of a guest or public wireless LAN

- **Authenticated network access:** authenticates users with an internal or external RADIUS server or Microsoft® Active Directory before allowing full network connectivity

Management

- **Automated work flows:**
  - **Initial controller settings:** define basic operational settings for the controller, including network connections, security settings, and system time
  - **Wireless network for employees:** enables setup of a new wireless network for employees, including network and security settings
  - **Wireless network for guests:** provides wireless access for guest users, including network and security settings specific to guest access

- **Remote configuration and management:** are available through secure Web browser, command-line (console port or SSH), SOAP, or SNMP

- **Management interface control:** allows interfaces to be enabled or disabled depending on security preferences

- **Management VLAN:** segments traffic to and from management interfaces, including CLI, Web browser interface, and SNMP

- **RADIUS accounting support:** separates RADIUS accounting server support per SSID; provides detailed session, usage, and billing information for each client activity

- **Logging:** provides local and remote logging of events via SNMP (v2c and v3) and syslog; provides log throttling and log filtering to reduce the number of log events generated

- **Controller networking:** includes IEEE 802.1d-compliant bridging and Bridge MIB (RFC 4188), which is supported only on a primary bridge interface; stateful firewall; PPPoE Client (RFC 2516); ICMP (RFC 792); IEEE 802.1q VLAN tagging; NAT (RFC 1631); CIDR (RFC 1519); L2TP and PPTP servers for wireless clients; VPN client, which establishes PPTP or IPSec tunnels to other devices; and IGMP snooping, which is supported on the wireless interfaces of APs

- **DHCP support:** includes RFC 2131 and RFC 3046 (DHCP Relay Option-82) for server and built-in DHCP client for client

- **Band steering:** the MSM422, MSM430, MSM466, and MSM466-R APs can automatically redirect 5 GHz-capable clients to the 5 GHz spectrum

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- **Network management support:**

  – **HP PCM+ and Mobility Manager:** provide central management for discovery, logging, status, and configuration management

  – **Controller management:** provides secure Web browser (SSL, VPN), command-line interface and SOAP, SNMP v2c and v3, MIB-II with traps, RADIUS Authentication Client MIB (RFC 2618), RIPv2 MIB Extension (RFC 1724), scheduled configuration and firmware upgrades from a central server, per-user activity records by time used or data transferred, and remote syslog

- **Unified network visibility:** provides visibility between a wired and wireless network using IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow

Connectivity

- **10 GbE connections to the switch fabric (MSM765 zl Premium Mobility controller only):** two 10-GbE wire-speed internal connections help ensure that the network connections from the application to the switch backplane will not limit application performance

- **IPv6 wireless client traffic forwarding:** is supported for Layer 2 and Layer 3 mobility (MTM) and for client traffic directly bridged at the AP

- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and HP port trunking (MSM720 controller only):** support up to six ports bonded via LACP; support manually configured trunks between an HP switch and the controller

Performance

- **High-performance processor system:**

  – **MSM720:** Freescale Dual Core 800MHZ P1020 Processor with a 256 KB cache in an appliance designed for 10 to 40 APs

  – **MSM760:** Intel® Core™ 2 Duo Processor E6400 with 2.13 GHz and 2 MB cache in an appliance designed for larger environments

  – **MSM765 zl:** Intel Core 2 Duo Processor T7500 with 2.2 GHz and 4 MB cache in a single-switch slot designed for larger chassis-based environments

- **Memory subsystems:** 4/2/1 GB of memory (MSM765 (DDR2)zl/MSM760 (DDR2)/MSM720 (DDR3) provides enhanced application performance

- **Disk drive (MSM76x):** 250 GB SATA II 7200 rpm hard disk drive allows rapid data reads/writes, providing improved application performance

Mobility

- **Solutions enhanced for businesses:** MSM7xx controllers deliver services for a range of vertical markets, including healthcare, hospitality, education, manufacturing, transportation, and service providers

- **Powerful security capabilities:** robust, identity- and role-based user account profiles use internal or external AAA services

- **Solutions that cover the most important WLAN applications:** HP MSM solutions deliver rich application support, including guest access, location-based services, Voice over Wi-Fi (VoWi-Fi), hotspot, surveillance, and secure point of sale

- **Capacity that scales from small office to large campus:** efficiently deploy wireless LANs (WLANs) with the MSM710 controller, which controls up to 10 APs; the MSM720 controller, which supports 10 to 40 APs; and the MSM760 and MSM765 zl controllers, which control 40 to 200 APs

- **Premium Mobility scalability features:**

  – **Virtual controller:** supports a team of up to 800 APs and five controllers (MSM76x—must be the same type within a team) or 40 APs across two controllers (MSM720) managed via a single IP address

  – **N+1 redundancy:** teaming provides N+1 redundancy

  – **Seamless failover:** APs can fail-over without rebooting, which preserves network mobility services for wireless clients when the client traffic is bridged locally at the AP

  – **64 VSC profiles:** up to 64 profiles can be defined

- **Mobility Traffic Manager:** flexible and multiple network distribution schemes address any business need; policies for user network and security profiles are consistently applied and enforced; wireless traffic can be directed anywhere in the network as required; enterprise businesses can easily migrate to the MSM mobility solution, preserving prior network design

- **Controller client access control:** provides SSL-protected universal access method, MAC address authentication, and IEEE 802.1x authentication; Web proxy server; support for centralized portal; AAA Security; WPA and WPA2 encryption; client-fixed IP address spoofing; per-site and per-user access lists; white list and black list support; bandwidth limiting per user, per VLAN, or per VSC; and concurrent users (100 for the MSM710, 250 for the MSM720, and 2,000 for the MSM760 and MSM765 zl controllers)

- **Simplified management with central control:** MSM7xx controllers reduce the time and complexity of managing a wireless network; the solution controls up to hundreds of APs (depending on the controller) from a single management interface and helps ensure that a consistent set of services is delivered throughout the wireless network; the controllers push authentication, encryption, QoS enforcement, and access policies to the access points, delivering intelligence to the edge of mobile networks

- **Services:** provides standard Layer 2 roaming and VoWLAN support on all controllers, advanced fast roaming on mobility controllers, plug-and-play AP management, and public and guest Internet access

- **Advanced fast roaming (requires mobility controller or upgrade):** provides WPA2 Opportunistic Key Caching through controller support and inter-/intra-subnet roaming and seamless roaming (less than 50 ms roaming delay) support for Voice-over-Wi-Fi deployments

Security

- **Secure Shell:** encrypts all transmitted data for secure remote CLI access over IP networks

- **Secure Sockets Layer (SSL):** encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch

- **IEEE 802.1X, Active Directory, and RADIUS network logins:** control wireless network access for authentication and accountability using IEEE 802.1x, Microsoft Active Directory, and RADIUS

- **RADIUS-based MAC authentication:** authenticates a wireless client with a RADIUS server based on the MAC address of the client; this is useful for clients with minimal or no user interface

- **Web-based authentication:** provides a Web browser-based environment to authenticate clients that may not support the IEEE 802.1X supplicant

- **IEEE 802.1x supplicant on MSM APs:** helps prevent deployment of rogue networking equipment

- **Secure management access:** securely encrypts all access methods (CLI, GUI, or MIB) through SSH v2c, SSL, and/or SNMPv3

Policy management

- **Standards-based authentication support for Microsoft Active Directory and IEEE 802.1X:** seamlessly integrates into existing authentication services or uses the built-in database

- **Integration with HP Identity Driven Manager:** helps ensure that ACLs, VLANs, QoS profiles, and bandwidth limits are applied and enforced uniformly across wireless and wired networks

Additional information

- **TAA versions for the MSM720 controller:** for U.S. government manufactured sales requirements, order the TAA MSM720 controller models; for all other AMS and WW orders, use WW models

- **New licensing model for guest user access (v5.7 and later):** the full number of supported guest access user sessions is enabled with the base-level controller models and no longer is tied to the AP upgrade license (e.g., the base MSM720 [access and Premium Mobility] controllers will now support 250 concurrent guest access user sessions; the MSM76x base controllers will now support 2,000 guest access user sessions without requiring additional AP license upgrades)

- **10-AP license upgrade option:** can be used on the MSM720 and MSM76x products on all supported firmware releases

- **New licensing model for the MSM317 Access Device (v5.7 and later):** no additional AP license is required for the MSM317; non-MSM317 devices are subject to AP licensing; maximum wireless device limits per controller and team are unchanged, and all devices count toward these maximums (e.g., an MSM760 could manage 200 MSM317 devices with no additional AP license; or 40 APs and 160 MSM317 devices with no additional AP license; or 80 APs and 120 MSM317 devices with an additional 40-AP license.

Warranty and support

- **Lifetime warranty:** for the MSM720 and MSM765 zl controllers (with the exception of the hard disk drive which has a 5-year limited warranty) for as long as you own the product, with next-business-day advance replacement (available in most countries)†

- **1-year warranty:** for the MSM710 and MSM760 controllers

- **Electronic and telephone support:** limited electronic and telephone support is available from HP; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary

- **Software releases:** to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

†Hardware warranties replacement for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceONE Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP Extended Services zl Module with Riverbed Steelhead RiOS Application, HP MSM765 zl Premium Mobility Controller and HP Survivable Branch Communication zl Module powered by Microsoft® Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at www.hp.com/networking/warranty.

HP MSM Controller Series

Specifications

	HP MSM710 Mobility Controller (J9325A)	HP MSM710 Access Controller (J9328A)	HP MSM720 Premium Mobility Controller (WW) (J9694A)
Ports	2 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	2 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	4 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	1 RS-232C DB-9 console port	1 RS-232C DB-9 console port	2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)
			1 RJ-45 serial console port
Physical characteristics			
Dimensions	7.5(d) x 10(w) x 1.74(h) in. (19.05 x 25.4 x 4.42 cm)	7.52(d) x 10(w) x 1.73(h) in. (19.1 x 25.4 x 4.4 cm)	10(d) x 6.28(w) x 1.75(h) in. (25.4 x 15.95 x 4.45 cm)
Weight	6 lb. (2.72 kg)	6 lb. (2.72 kg)	3.62 lb. (1.64 kg)
Mounting	1U rack mountable with the HP MSM710 Controller Rack Mounting Kit (J9404A)	1U rack mountable with the HP MSM710 Controller Rack Mounting Kit (J9404A)	MSM720 controller supports the mounting options of the 2520-8 port, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting.
Performance			
100 Mb Latency			< 20.4 μs (LIFO 64-byte packets)
1000 Mb Latency			< 6.3 μs (LIFO 64-byte packets)
Throughput			up to 8.9 million pps
Switch fabric speed			12 Gbps
MAC address table size			12000 entries
Environment			
Operating temperature	41°F to 104°F (5°C to 40°C)	41°F to 104°F (5°C to 40°C)	41°F to 113°F (5°C to 45°C)
Operating relative humidity	20% to 90%, noncondensing	20% to 90%, noncondensing	15% to 95% @ 104°F (40°C)
Nonoperating/Storage temperature	-40°F to 176°F (-40°C to 80°C)	-40°F to 176°F (-40°C to 80°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	15% to 95% @ 149°F (65°C)
Electrical characteristics			
Description	IEEE 802.3af PoE compliant, or 48 VDC input from included AC power supply	IEEE 802.3af PoE compliant, or 48 VDC input from included AC power supply	
Maximum heat dissipation			70 BTU/hr (73.85 kJ/hr)
Voltage	100-240 VAC	100-240 VAC	100-240 VAC
Current	0.2/0.1 A	0.2/0.1 A	.2/.1 A
Maximum power rating	6 W	6 W	20 W
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Emissions	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003
Features	Supported:	Supported:	Supported:
	- IEEE 802.11 n/a/b/g access points and/or access devices	- IEEE 802.11 n/a/b/g access points or access devices	- IEEE 802.11 n/a/b/g access points and/or access devices
	- 10 access points and/or access devices	- 10 access points and/or access devices	- 10 to 40 access points and/or access devices (in increments of 10)
	- 100 simultaneous guest access users	- 100 simultaneous guest access users	- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
	Included services:	Included services:	- 250 simultaneous guest access users
	- Plug-and-play AP management and WLAN management	- Plug-and-play AP management and WLAN management	Included services:
	- Guest access	- Guest access	- Plug-and-play AP management and WLAN management
	- Captive portal	- Captive portal	- Guest access
	- PCI DSS compliance for wireless PoS traffic	- PCI DSS compliance for wireless PoS traffic	- Captive portal
	- Support for Real-Time Location Services (RTLS)	- Support for Real-Time Location Services (RTLS)	- PCI DSS compliance for wireless PoS traffic
	- Advanced fast roaming with VoWLAN support	- Standard Layer 2 roaming with VoWLAN support	- Support for Real-Time Location Services (RTLS)
	- Mobility Traffic Manager (MTM)	- Support for up to 16 VSC profiles	- Advanced fast roaming with VoWLAN support
	- Support for up to 16 VSC profiles	- Unified policy enforcement and network visibility	- Mobility Traffic Manager (MTM)
	- Unified policy enforcement and network visibility		- Support for up to 64 VSC profiles
			- Unified policy enforcement and network visibility

Specifications (continued)

	HP MSM710 Mobility Controller (J9325A)	HP MSM710 Access Controller (J9328A)	HP MSM720 Premium Mobility Controller (WW) (J9694A)
			- Virtual controller (up to two MSM720 controllers and 40 APs with resiliency)
Notes			Latency values refer to client traffic bridged locally at the AP. For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.
Services	3-year, parts only, global next-day advance exchange (UN535E)	3-year, parts only, global next-day advance exchange (UN639E)	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
	3-year, 4-hour onsite, 13x5 coverage for hardware (UN536E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UN640E)	
	3-year, 4-hour onsite, 24x7 coverage for hardware (UN537E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UN641E)	
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UN538E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UN642E)	
	3-Year, 9x5 SW phone support, software updates (UQ581E)	3-Year, 9x5 SW phone support, software updates (UQ583E)	
	3-year, 24x7 SW phone support, software updates (UQ582E)	3-year, 24x7 SW phone support, software updates (UQ584E)	
	1-year, post-warranty, parts only, global next-day advance exchange (UN539PE)	1-year, post-warranty, parts only, global next-day advance exchange (UN643PE)	
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (UN540PE)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (UN644PE)	
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (UN541PE)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (UN645PE)	
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UN542PE)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UN646PE)	
	3 Yr 6 hr Call-to-Repair Onsite (UW328E)	3 Yr 6 hr Call-to-Repair Onsite (UW331E)	
	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Specifications (continued)

	HP MSM720 Access Controller (WW) (J9693A)	HP MSM720 TAA Premium Mobility Controller (J9696A)	HP MSM720 TAA Access Controller (J9695A)
Ports	4 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	4 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	4 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)	2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)	2 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)
	1 RJ-45 serial console port	1 RJ-45 serial console port	1 RJ-45 serial console port
Physical characteristics			
Dimensions	10(d) x 6.28(w) x 1.75(h) in. (25.4 x 15.95 x 4.45 cm)	10(d) x 6.28(w) x 1.75(h) in. (25.4 x 15.95 x 4.45 cm)	
Weight	3.62 lb. (1.64 kg)	3.62 lb. (1.64 kg)	
Mounting	MSM720 controller supports the mounting options of the 2520-8 port, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting.	MSM720 controller supports the mounting options of the 2520-8 port, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting.	MSM720 controller supports the mounting options of the 2520-8 port, including EIA-standard 19 in. Telco rack or equipment cabinet (rack-mounting kit included); horizontal surface or wall mounting.
Performance			
100 Mb Latency	< 20.4 µs (LIFO 64-byte packets)		
1000 Mb Latency	< 6.3 µs (LIFO 64-byte packets)		
Throughput	up to 8.9 million pps		
Switch fabric speed	12 Gbps		
MAC address table size	12000 entries		
Environment			
Operating temperature	41°F to 113°F (5°C to 45°C)	41°F to 113°F (5°C to 45°C)	41°F to 113°F (5°C to 45°C)
Operating relative humidity	15% to 95% @ 104°F (40°C)	15% to 95% @ 104°F (40°C)	15% to 95% @ 104°F (40°C)
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C)	15% to 95% @ 149°F (65°C)	15% to 95% @ 149°F (65°C)
Electrical characteristics			
Maximum heat dissipation	70 BTU/hr (73.85 kJ/hr)		
Voltage	100-240 VAC	100-240 VAC	100-240 VAC
Current	.2/.1 A		
Maximum power rating	20 W		
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Safety	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1	UL 60950-1; IEC 60950-1; EN 60950-1; CAN/CSA-C22.2 No. 60950-1
Emissions	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003
Features	Supported: - IEEE 802.11 n/a/b/g access points and/or access devices - 10 to 40 access points and/or access devices (in increments of 10) - IEEE 802.3ad Link Aggregation Control Protocol (LACP) - 250 simultaneous guest access users Included services: - Plug-and-play AP management and WLAN management - Guest access - Captive portal - PCI DSS compliance for wireless PoS traffic - Support for Real-Time Location Services (RTLS) - Standard Layer 2 roaming with VoWLAN support - Support for up to 16 VSC profiles - Unified policy enforcement and network visibility	Supported: - IEEE 802.11 n/a/b/g access points and/or access devices - 10 to 40 access points and/or access devices (in increments of 10) - IEEE 802.3ad Link Aggregation Control Protocol (LACP) - 250 simultaneous guest access users Included services: - Plug-and-play AP management and WLAN management - Guest access - Captive portal - PCI DSS compliant for wireless PoS traffic - Support for Real-Time Location Services (RTLS) - Advanced Fast roaming with VoWLAN support - Mobility Traffic Manager (MTM) - Support for up to 64 VSC profiles - Unified policy enforcement and network visibility - Virtual controller (up to two MSM720 controllers and 40 APs with resiliency)	Supported: - IEEE 802.11 n/a/b/g access points and/or access devices - 10 to 40 access points and/or access devices (in increments of 10) - IEEE 802.3ad Link Aggregation Control Protocol (LACP) - 250 simultaneous guest access users Included services: - Plug-and-play AP management and WLAN management - Guest access - Captive portal - PCI DSS compliant for wireless PoS traffic - Support for Real-Time Location Services (RTLS) - Standard Layer 2 roaming with VoWLAN support - Support for up to 16 VSC profiles - Unified policy enforcement and network visibility

Specifications (continued)

	HP MSM720 Access Controller (WW) (J9693A)	HP MSM720 TAA Premium Mobility Controller (J9696A)	HP MSM720 TAA Access Controller (J9695A)
Notes	Latency values refer to client traffic bridged locally at the AP. For U.S. government manufactured sales requirements, order the TAA MSM720 controller models. For all other AMS and WW orders, use WW models.		
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Specifications (continued)

	HP MSM760 Premium Mobility Controller (J9420A)	HP MSM760 Access Controller (J9421A)	HP MSM765 zl Premium Mobility Controller (J9370A)
Ports	2 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	2 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	1 RJ-45 serial console port	1 RJ-45 serial console port	
Physical characteristics			
Dimensions	15.38(d) x 17.32(w) x 1.75(h) in. (39.07 x 43.99 x 4.45 cm) (1U height)	15.38(d) x 17.32(w) x 1.75(h) in. (39.07 x 43.99 x 4.45 cm) (1U height)	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
Weight	13.45 lb. (6.1 kg)	13.45 lb. (6.1 kg)	2.05 lb. (0.93 kg)
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Can be installed in any of the following chassis: HP 5406 zl (J8697A), 5412 zl (J8698A), and 8212 zl (J8715A)
Environment			
Operating temperature	41°F to 104°F (5°C to 40°C)	41°F to 104°F (5°C to 40°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	15% to 80%, noncondensing	15% to 80%, noncondensing	15% to 95% @ 131°F (55°C), noncondensing
Nonoperating/Storage temperature	-40°F to 149°F (-40°C to 65°C)	-40°F to 149°F (-40°C to 65°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity			15% to 95%, noncondensing
Electrical characteristics			
Maximum heat dissipation	434 BTU/hr (457.87 kJ/hr)	434 BTU/hr (457.87 kJ/hr)	272 BTU/hr (287 kJ/hr)
Voltage	100-240 VAC	100-240 VAC	100-240 VAC
Current	2/1 A	2/1 A	1.0/0.4 A
Maximum power rating	127 W		80 W
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Safety	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1	UL 60950-1; CAN/CSA 22.2 No. 60950-1; IEC 60950-1; EN 60950-1
Emissions	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003	FCC part 15 Class A; EN 55022 Class A; CISPR 22 Class A; ICES-003
Features	Supported: - IEEE 802.11 n/a/b/g access points and/or access devices - 40 to 200 access points and/or access devices (in increments of 10 or 40) - MSM firmware releases prior to MSM v5.7: 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users - MSM v5.7 and later: 2,000 simultaneous guest access users with base product Included services: - Plug-and-play AP management and WLAN management - Guest access - Captive portal - PCI DSS compliance for wireless PoS traffic - Support for Real-Time Location Services (RTLS) - Advanced fast roaming with VoWLAN support - Mobility Traffic Manager (MTM) - Support for up to 64 VSC profiles - Unified policy enforcement and network visibility - Virtual controller (up to five MSM765 zl controllers and 800 APs with resiliency)	Supported: - IEEE 802.11 n/a/b/g access points and/or access devices - 40 to 200 access points and/or access devices (in increments of 10 or 40) - MSM firmware releases prior to MSM v5.7: 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users - MSM v5.7 and later: 2,000 simultaneous guest access users with base product Included services: - Plug-and-play AP management and WLAN management - Guest access - Captive portal - PCI DSS compliance for wireless PoS traffic - Support for Real-Time Location Services (RTLS) - Standard Layer 2 roaming with VoWLAN support - Support for up to 16 VSC profiles - Unified policy enforcement and network visibility	Supported: - IEEE 802.11 n/a/b/g access points and/or access devices - 40 to 200 access points and/or access devices (in increments of 10 or 40) - MSM firmware releases prior to MSM v5.7: 1,000 simultaneous guest access users upgradable in increments of 250 per 40-AP license pack, up to a maximum of 2,000 guest access users - MSM v5.7 and later: 2,000 simultaneous guest access users with base product Included services: - Plug-and-play AP management and WLAN management - Guest access - Captive portal - PCI DSS compliance for wireless PoS traffic - Support for Real-Time Location Services (RTLS) - Advanced fast roaming with VoWLAN support - Mobility Traffic Manager (MTM) - Support for up to 64 VSC profiles - Unified policy enforcement and network visibility - Virtual controller (up to five MSM765 zl controllers and 800 APs with resiliency)
Notes			A maximum of four MSM765 zl controllers can be installed in the same chassis, and a maximum of three MSM765 zl controllers are supported in the 5406 zl switch.
Services	3-year, parts only, global next-day advance exchange (UQ652E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UQ653E)	3-year, parts only, global next-day advance exchange (UQ652E) 3-year, 4-hour onsite, 13x5 coverage for hardware (UQ653E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UQ601E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UQ602E)

Specifications (continued)

	HP MSM760 Premium Mobility Controller (J9420A)	HP MSM760 Access Controller (J9421A)	HP MSM765 zl Premium Mobility Controller (J9370A)
	3-year, 4-hour onsite, 24x7 coverage for hardware (UQ654E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UQ654E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ604E)
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ656E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UQ655E)	3-Year, 9x5 SW phone support, software updates (UQ617E)
	3-Year, 9x5 SW phone support, software updates (UQ615E)	3-Year, 9x5 SW phone support, software updates (UQ613E)	3-year, 24x7 SW phone support, software updates (UQ618E)
	3-year, 24x7 SW phone support, software updates (UQ616E)	3-year, 24x7 SW phone support, software updates (UQ614E)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HS511E)
	1-year, post-warranty, parts only, global next-day advance exchange (UQ657PE)	1-year, post-warranty, parts only, global next-day advance exchange (UQ657PE)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HS512E)
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (UQ658PE)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (UQ658PE)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HS513E)
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (UQ659PE)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (UQ659PE)	4-year, 4-hour onsite, 13x5 coverage for hardware (UQ605E)
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UQ661PE)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UQ660PE)	4-year, 4-hour onsite, 24x7 coverage for hardware (UQ606E)
	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	3 Yr 6 hr Call-to-Repair Onsite (UW317E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UQ608E)
		Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	4-year, 24x7 SW phone support, software updates (UQ607E)
			5-year, 4-hour onsite, 13x5 coverage for hardware (UQ609E)
			5-year, 4-hour onsite, 24x7 coverage for hardware (UQ610E)
			5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UQ612E)
			5-year, 24x7 SW phone support, software updates (UQ611E)
			1-year, 6 hour Call-To-Repair Onsite for hardware (HS515E)
			1-year, 24x7 software phone support, software updates (HS514E)
			1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV086E)
			1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HV087E)
			3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV088E)
			3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HV089E)
			4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV090E)
			4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HV091E)
			5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HV092E)
			5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HV093E)
			Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP MSM Controller Series accessories

HP MSM710 Mobility Controller (J9325A)

HP 1-port Power Injector (J9407B)
HP MSM710 Controller Rack Mounting Kit (J9404A)

HP MSM710 Access Controller (J9328A)

HP 1-port Power Injector (J9407B)
HP MSM710 Controller Rack Mounting Kit (J9404A)
HP MSM710 Mobility Services Upgrade License (J9331A)

HP MSM720 Premium Mobility Controller (WW) (J9694A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)

HP MSM720 Access Controller (WW) (J9693A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)
NEW HP MSM720 Premium Mobility License (J9698A)

HP MSM720 TAA Premium Mobility Controller (J9696A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X121 1G SFP RJ45 T Transceiver (J8177C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)

HP X122 1G SFP LC BX-U Transceiver (J9143B)
NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)

HP MSM720 TAA Access Controller (J9695A)

HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X121 1G SFP RJ45 T Transceiver (J8177C)
HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
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NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)
NEW HP MSM720 Premium Mobility License (J9698A)

HP MSM760 Premium Mobility Controller (J9420A)

HP MSM760/765 Additional 40 Access Point License (J9371A)
NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)

HP MSM760 Access Controller (J9421A)

HP MSM760 Premium Mobility License (J9491A)
HP MSM760/765 Additional 40 Access Point License (J9371A)
NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)

HP MSM765 zl Premium Mobility Controller (J9370A)

HP MSM760/765 Additional 40 Access Point License (J9371A)
NEW HP MSM720/760/765 Additional 10 Access Point License (J9697A)

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